

# LIGHT BROWN APPLE MOTH ERADICATION PROJECT WORK PLAN

## DETECTION

### 1. Detection Trapping

The Department maintains a cooperative state/county trapping program for the various exotic insects to provide early detection of any infestation in the State. Traps are serviced by county and/or state personnel funded by the California Department of Food and Agriculture (Department). The light brown apple moth program uses Jackson traps baited with (E)-11-Tetradecenyl acetate: (E:E)-9, 11-Tetradecadienyl acetate, a pheromone lure that attracts male moths to the trap. Traps are hung from branches of host trees at specified densities in susceptible areas of California. County or state employees inspect these traps bi-weekly throughout the year in southern California, and from March through November in northern California.

### 2. Intensive Trapping

Placement of a delimitation trapping array is triggered after a single LBAM is caught in an area not currently infested with LBAM. Following confirmation of the specimen, trap densities in the core square mile(s) are increased within 24 hours. Light brown apple moth traps will be increased to 100 traps around the epicenter (core) of the LBAM detection and 25 traps per square mile in the eight square miles surrounding the core square mile. Traps in the core mile(s) and the eight square miles around each core are serviced once the first week following the detection of an LBAM, then bi-weekly thereafter. Traps may be relocated to available preferred hosts as practical. All delimitation traps will be serviced on a regular schedule for a period of time equal to three generations beyond the date of the last LBAM detection. This time period is determined by a temperature-dependent developmental model run by Pest Detection/Emergency Projects Branch personnel in Sacramento.

### 3. Post-Treatment Monitoring

The success of the eradication program is monitored by delimitation trapping levels for one life cycle of the LBAM after the cessation of eradication activities. If no LBAM are caught during that time, trap densities return to detection levels.

## TREATMENT OPTIONS

### 1. Aerial Treatment

Multiple aerial applications with pheromone may be applied over the infested areas to disrupt the LBAM mating cycle. When the pheromone is applied over a large area, male LBAM have great difficulty locating females, eventually dying without mating with a female moth. Treatments will occur as specified by the label.

2. Ground application of pheromone disruption twist ties (also called ropes)

Pheromone disruption twist ties will be placed at the rate of 250 dispensers per acre in infested areas. Dispensers will be applied uniformly throughout the treatment area. Dispensers will be replaced every 90 days for two life cycles.

3. Ground Bait Spray

At least six applications of a naturally occurring bacteria, *Bacillus thuringiensis*, may be applied. The bacteria derived insecticide Spinosad may also be used with a maximum of six treatments applied per year to any specific site. Treatments of both materials are repeated at ten to 14 day intervals, unless significant rainfall justifies re-treatment. Any resident whose property will be treated with foliar sprays will be notified, in writing, prior to treatment.

4. Release of Stingless *Trichogramma* Wasps

Stingless *Trichogramma* wasps are mass released at a rate of approximately 1 million per square mile throughout the designated treatment area. These wasps seek out and lay their eggs within the eggs of the LBAM. The resulting wasp larvae eat the LBAM egg from the inside and an adult *Trichogramma* wasp eventually emerges. One or more *Trichogramma* releases may be used in conjunction with other tools.

5. Use of Male Moth Attractant Treatments

A mixture of a clay-based carrier, mineral oil, LBAM pheromone and the insecticide permethrin is applied to utility poles and trees on public and private property throughout the treatment area. The male LBAM are attracted to the mixture where they crawl over it looking for the female moth. The male LBAM will die after physical contact with the mixture. The mixture will be applied in 5 ml doses at a minimal height of eight feet to reduce citizen contact with the mixture. Applications will occur at 60 to 90 day intervals in conjunction with other tools.

## QUARANTINE ACTION

The official detection of any life stage of LBAM will trigger a quarantine or expansion of an existing quarantine boundary. The quarantine boundaries will be developed in association with local regulatory authorities.

All regulated entities, such as nurseries, landscapers, fruit harvesters, packing houses and green waste handlers will be identified, informed of the quarantine restrictions and placed under compliance agreement. Quarantine compliance inspections will be conducted as necessary in all quarantine areas to ensure ongoing compliance with quarantine restrictions.

Inspections of nurseries will be conducted inside the regulated areas in order to assess the status of LBAM on nursery stock. Traceforward and/or traceback investigations and inspections will also be conducted to determine potential sources of infestation.

Quarantine certification protocols will be developed and/or amended in association with industry representatives, researchers, and local regulatory authorities.

Training and public outreach materials will be provided to affected industries on quarantine compliance issues.

## PUBLIC INFORMATION

Public information concerning the LBAM project will minimally consist of press releases to the media to inform the general public, and direct notification of project developments to concerned local and state political representatives and authorities. Press releases are prepared by the Department's information officer and the county agricultural commissioner, in close coordination with the project management. Either the county agricultural commissioner or the public information officer serves as the primary contact to the media.